GRUMMAN
plane news
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Plan new Gulfstream for 80s

On Tuesday, November 9, plans for a new generation of Gulfstream executive jet were announced by Grumman American Aviation.

The Gulfstream III, a 1980's version of the Gulfstream II, will be able to fly from Chicago to Milan, Italy, or Lima, Peru, in less than 8½ hours, carrying eight passengers and their baggage—a 1,600 pound payload. The new executive jet will be certified to transport 19 passengers and crew—more passengers than any other executive jet in the world.

Compared to its predecessor, the G-III will have 35 percent more range (about 4,000 nautical miles) and 17 percent higher cruising speed (about 540 miles per hour), while travelling about 20 percent farther per pound of fuel.

The key to this new performance is a new "super-critical" wing that applies technology developed by Grumman Aerospace and NASA. Other G-III features are a larger baggage space, a bigger cockpit with a wider windshield for greater visibility, and a streamlined nose for improved aerodynamics and quieter operation. The new Gulfstream will employ Rolls Royce Spey NK-511 engines that have logged almost 900,000 flight hours on the Gulfstream II. The two turbo-fan jets with take-off thrust adjusted for the G-III will comply with the stringent airport noise regulations forecast for the 1980's. It is estimated that this adjustment will also reduce engine maintenance cost by as much as 40 percent.

Company plans to begin producing the new executive jet in 1980 depend on further tests of the design and final corporate approval of the project next year.

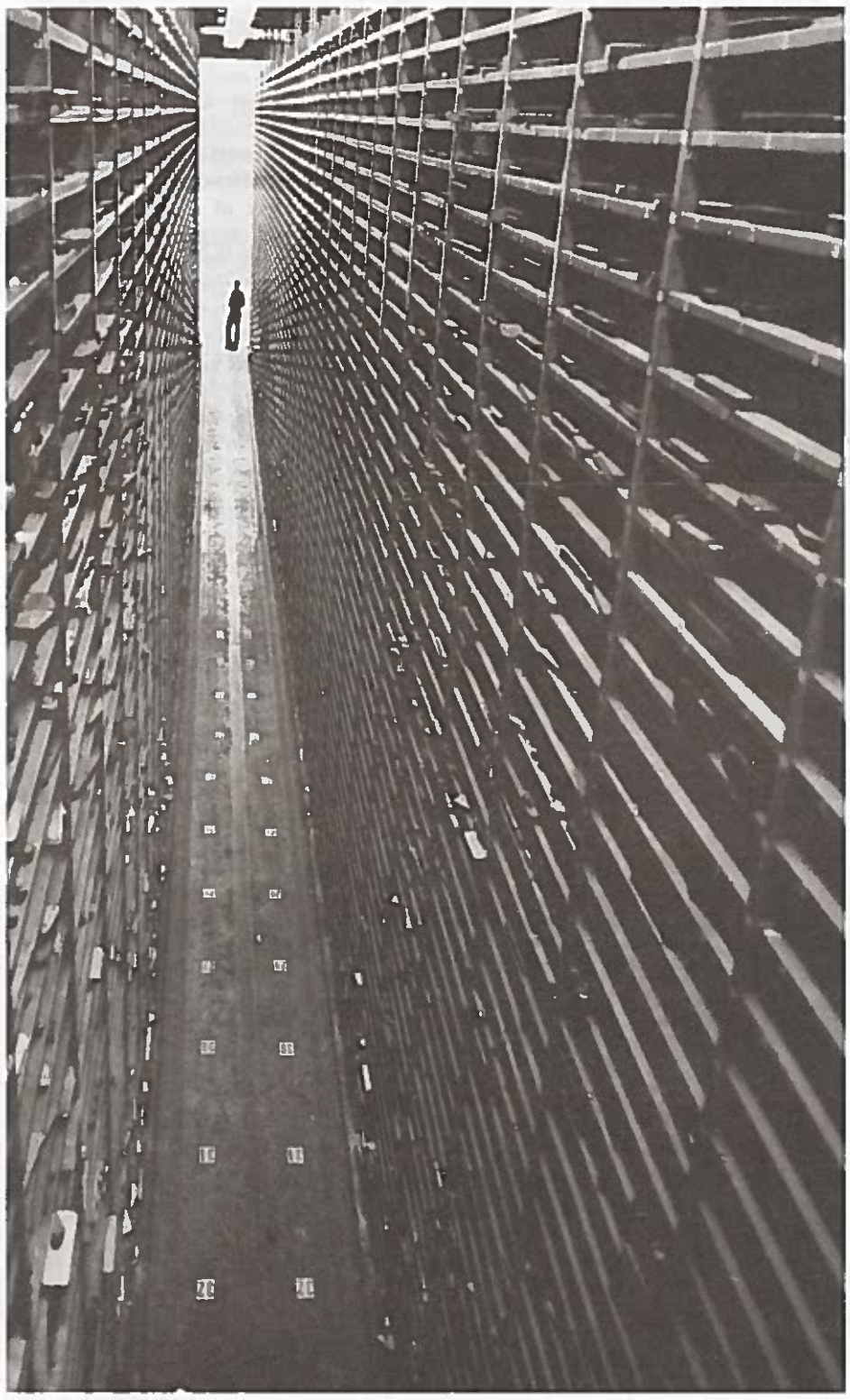
Space Programs receives new satellite study funds

Grumman Aerospace will begin working with Lockheed Missiles and Space Corporation for the next 22 months under a contract recently awarded by the Defense Advanced Research Projects Agency. Space Programs' Art Bertapelle and George McCarthy will work on phase one of the contract, valued at $150 thousand, but Grumman's total responsibility is valued at $3 million.

This last contract is one of many recently won by Space programs involving advanced mosaic sensing systems, a developing technology being researched as part of a future satellite program. According to Space Programs' Director Don Imgram, Grumman has been investing research and development funds for several years in this area, and he feels the work could lead to larger contracts. "Two of the advantages of working on this program," says Imgram, "is that it increases our knowledge and helps establish better contact with the customer, important because Grumman will bid on the main satellite program around the middle of next year. The mosaic systems contract could help us win the bid for the entire spacecraft, and that's one of our top objectives."

Space Programs has also won additional funding ($85 thousand) for further research on the High Altitude Large Optics (HALO) Program. The award will enable Pat Barry, Dick Gran, and Ralph Waters to continue work on new data processing techniques the team developed earlier this year.

According to Dr. Richard Kopp, director of Systems Sciences, the current investigation is an extension of the simulation research done several years ago for space programs. "This new technique," says Kopp, "involves another dimension, of image projection, and is really innovative—a breakthrough in two-dimensional data processing."



By the numbers. *Can you imagine trying to locate a tool in this storage area at Plant 2, with more than 450,000 tools and dies to choose from. According to Foreman Ed Bzdyk of Detail Tool Storage, tools used in the manufacture of parts at Plant 2 are filled in individual bins by the numbers, and a computer-assisted system permits quick and accurate retrieval. (Photo by Dick Sander)*

people

Most people relax on Sundays. Perhaps they play golf, work in the yard, or watch a game on TV. Others run around New York City, or more precisely, through it. That's right, a few weeks ago several Grummanites toured the five boroughs along with 2000 other runners in the 26-mile New York Marathon. The ambitious crowd started on the Staten Island side of the Verrazano Narrows Bridge and ended up in Central Park, loosing about 500 participants on the way.

The Grumman runners (listed with their finishing times) are: Joe Caldwell—3 hrs. 11 min.; Bill Dunmyer—3 hrs. 22 min.; Patrick Farrel—4 hrs. 53 min.; Al Loeffler—3 hr. 58 min.; Ralph Palomba—4 hrs. 10 min.; and Santo Serra—4 hrs. 30 min. According to Joe Caldwell, who ran with an injured shin, the trip was "not too bad, except for the cobblestone streets, which were murder." Bill Dunmyer was glad he finished, "but about two thirds of the way through, I was saying to myself, "What am I doing here? I must be crazy!" Crazy or not, on Monday morning Bill and the other runners had an answer for the question, "What did you do this weekend?"

A star(s) is born...

When the movie "Roller Coaster" makes its way into your neighborhood, look for Isaac Cimerman's youngsters, Dick, Sandra, and Debbie, who were chosen to play in the film as extras. Cimerman is stationed at Norfolk for Field Service, and by chance the film is being shot at the Old Ocean View Amusement Park in the area. The children were selected from a number of others to make their screen debut, and besides the thrill of being able to see themselves on film, they got paid for their stint, too.

Helping out...

The Long Island Aero Radio Society hosted a radio-controlled model airplane show at Suffolk County Fairgrounds a couple of weeks ago and, according to Bob Ellisen of Field Service, Plant 15, it was a huge success. Besides putting on an aerial display and conducting competitions for aero-radio model enthusiasts, the club members were able to donate over $1,300 to the Childrens Asthma Research Institute in Colorado. Way to go, fellas!

We'll be back. A few weeks ago, Cdr. Frank Mezzadri, commanding officer of VF-213, and Lt. Cdr. Jerry Arbini, arrived at Calverton to pick up the first of 12 F-14s for the 'Black Lions.' A former F-4 squadron, VF-213 will officially 'stand-up' as an F-14 unit in mid-December. The 12th Tomcat is slated for delivery to the 'Black Lions' in February '77. (Photo by Gerry Costello)

Appointments

Among those who recently received changes in assignments were: William Borruso, deputy director of Customer Training in Training Systems; DEPARTMENT OPERATIONS—in Integrated Logistics Support, Joseph Casey Jr., project manager, Supply Ops., ATE Systems; and Edward A. Stroud, manager, Equipment Engineering; and in the Engineering Department, Douglas Grundy, technical specialist, Fuel Systems; and Glenford J. Wennagel, appointed to the staff of the Manager of Vehicle Design, in addition to his present duties; and OPERATIONS QUALITY—Robert G. Raymond, inspection manager, Plant 4, Bethpage Responsibility Center.

calendar

AIAA: Tues., Nov. 30, Holiday Manor, Bethpage, cocktails 6 p.m., dinner 6:45 p.m., presentation 7:45 p.m.; local chapter; guest speaker: Gen. Rogers, AFLC (Air Force Logistics Command)—"Budget Restrictions on AF Logistics"; guests welcome. E. Waesche, x7401/K. Webster, x7387.

Aikido Club: every Mon. & Wed., 5:15 p.m., Pl. 35 cafe; Japanese Martial Art; L.I. Aikido Federation; all guests welcome. Bob Bauman, x3886/Mike Stock, x84014.

Alcoholics Anonymous: every Mon., 5 p.m., Pl. 39, classroom 1; closed meetings. Personnel Relations, x3521; **Calverton:** every Mon., 4-5 p.m., Pl. 8 trailer.

Amateur Radio Club: Wed., Nov. 17, 5 p.m., Pl. 5 roof, radio shack; local chapter; election of 1977 officers; guests welcome. John Courtney, x2536.

American Production & Inventory Control Society: Tues., Nov. 16, Crow's Nest, Rte. 110, Farmingdale, dinner 6 p.m., presentation 8 p.m.; local chapter; guest speaker: John Hill, v.p. Computer Identics—"Computer Based Code Reading Systems for Materials"; guests welcome. Norm Heilweil, x2250.

American Society of Mechanical Engineers: Wed., Nov. 17, 6 p.m., Merchant Marine Academy, Kings Point; local chapter; Ocean Science dinner meeting; guest speaker: Capt. Alfred E. Fiore, Hd. Dept. Nautical Sciences—"Controlling Maritime Traffic with Satellites"; L. Hemmerdiner, x6168.

GACE Flying Club: Fri., Nov. 12, 5 p.m., Pl. 28 auditorium; FAA movie—Take-Offs & Landings; election of 1977 officers; all welcome. Larry Hahn, 515-3389.

Grumman Scuba Divers Club: Wed., Dec. 1, 6 p.m., Chateau Restaurant, Bagatelle Rd.; election of 1977 officers; all welcome. C. Schlicter, x6120.

Grumman Tennis Club: first Tues. of every month, 5 p.m., Pl. 28 auditorium. Frank Campagna, x84605.

Grumman Toastmasters Club: Wed., Nov. 17, 5 p.m., Pl. 25 conference room 1C; local chapter; regular meeting; all welcome. Tom Smith, x3533.

Grumman Dance Club: Thurs., Dec. 2 cha-cha lessons, Dec. 9/16 folk dancing; open to all. Marvin Brown, x515-3777.

Retiree Club: Wed., Nov. 24, 1:30 p.m., Holiday Manor; election of 1977 officers;
Florida Mid West: Tues., Nov. 16, 11:30 a.m., Holiday Inn, Crystal River; **Florida Treasure Coast:** Thurs., Nov. 18, 12:30 p.m., Trade Winds Cafe, Fort Pierce; **Florida Sun Coast:** Mon., Nov. 22, 11:30 a.m., S&S Cafe, Sears Town, 1235 S. Missouri Ave., Clearwater.

Society of Logistics Engineers: joint meeting with AIAA.

Stamp Club: 1st, 2nd, 3rd Wed. of each month, 4:45 p.m., Pl. 30 cafe. Steve Hoops, x87451.

The National Secretaries Association (Intl.): Thurs., Nov. 18, Polish Independent Club (Black Lantern Room), Marcy Ave., Riverhead, cocktails 6:30 p.m., dinner 7 p.m.; Twin Forks Chapter; Secretary of the Year Context; all welcome. E. Merten Gaias, x517-7181.

Saluted for service. Ten men were presented with Federal length-of-service awards recently by Capt. Bill Oldmixon (R), Naval Plant Representative at Bethpage, at a ceremony attended by wives in Plant 35. Except for Bill Miller, who has 30 years' service with the Government, all others have 35 years' service. Pictured here (L to R) are Ralph and Dorothy Carusona, Lenny and Roseanne Giambalvo, Miller, Bob Piatnick, Sol Soskin, Mike Armocida, Tom Fischer, Charlie DiMino, Bill Ghigna, and Mary and Pete Sicardi.

obituaries

NAFRIO P. NAPOLI of ILS Technical Services, Plant 31, died October 20 at the age of 51. He worked with Grumman since 1970 and resided at 50 Marilynn St., E. Islip.

ARTHUR CHARLES HEYMAN of Stability & Control/Fly. Qual., Plant 5, died October 26 at the age of 43. He worked for the company since 1964 and lived at 72 Fulton Ave., Atlantic Beach.

Pre-flight prep. E-2C No. 34, the first production Hawkeye equipped with new radar system called ARPS, took its maiden flight on November 1.

New radar system expands E-2C Hawkeye's vision

Praised for contributing a new dimension to the Navy's tactical air arm during four deployments with the U.S. Fleet, the E-2C Hawkeye is adding yet another dimension to its impressive detection and tracking capability.

When E-2C production aircraft No. A-34 flew its first flight on November 1, it became the first production aircraft equipped with an improved radar system, the AN/APS-125 known as ARPS (Advanced Radar Processing System). This improved system provides automatic overland tracking, as well as an "anti-jam" capability.

Based upon development flight testing of a prototype configuration conducted over nine months during 1974, and two Navy Preliminary Evaluations (NPE's) conducted in 1975, this new generation radar has demonstrated exceptional enhancement of the airborne early warning aircraft, says E-2 Program Director Al Verderosa. In fact, the equipment performance during the two NPE's demonstrated a capability far exceeding specification requirements in the areas of detection and tracking.

The new E-2C ARPS underwent a wide variety of laboratory tests to insure its environmental integrity as well as its Reliability and Maintainability. Once again, during these tests, the equipment demonstrated a much higher level of performance than specified.

According to Verderosa, the development and production incorporation of a system as technically complex as ARPS has been as smooth as any he has experienced in his 20 years with Grumman. Says Verderosa, "from the beginning of the ARPS development program in '73 through the production phase, it has been a real integrated effort between Grumman, General Electric, the manufacturer of the equipment, and the U.S. Navy. The Navy was intimately involved in the development and flight test efforts, playing an active role in the hardware's design evolution. It should serve as a model for future developments of its type".

According to Verderosa, the ARPS program will result in approximately $200 million additional new business, as well as providing an enhancement to the E-2C which has been instrumental in broadening international market potential. The Government of Israel has ordered four ARPS equipped E-2C aircraft for delivery in 1978. Additional interest has been expressed by other foreign countries. "ARPS provides a new dimension to the E-2C's capability, which makes the aircraft more attractive to countries requiring airborne early warning", says Verderosa.

The ARPS configured E-2C's will undergo additional Navy test evaluation in 1977. All indications are that the "Eyes of the Fleet" will become keener as a result of ARPS.

GRUMMAN plane news

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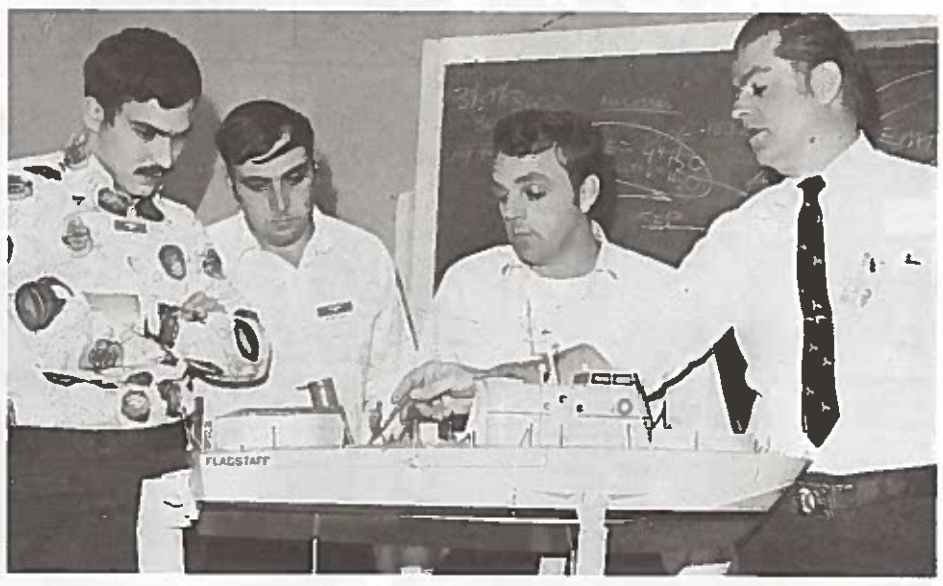
Coast Guard preparing Flagstaff for new role

The Grumman-built hydrofoil Flagstaff has changed oceans and will soon be operating in the Atlantic with a new skipper and crew. The U.S. Coast Guard has taken possession of the former Navy vessel, shipped it from San Diego, California to Woods Hole, Massachusetts, and will begin operating it for law enforcement tasks around March 1977.

Flagstaff, originally delivered to the Navy in 1968, will be with the Coast Guard for one to five years and be used for (among other tasks) marine environmental protection and search-and-rescue missions. It's not the first time the boat has been with the Coast Guard, though. In 1974 Flagstaff was loaned to the Guard's Research and Development Center for an evaluation off the West Coast. Now it will be a commissioned cutter, with a crew of 12 enlisted men and one officer.

The skipper, Lt. Terry Hart, and his men came to Plant 39 the last two weeks of October for a series of training and familiarization courses provided by members of the Marine Programs Department. The classes, according to manager Larry Bauer, were "basically instruction in the 'care and feeding' of hydrofoils, in particular, Flagstaff. The students," he added, "were excellent. They're professional sailors who came here to familiarize themselves with the unique systems of the craft."

Flagstaff should be an asset to the Coast Guard. Its high speed and stability make it an ideal vessel for response to distress calls as well as investigating oil spills and fisheries violations (especially important when the new 200-mile offshore limit goes into effect next March). In the meantime, the craft is being readied for its newest assignment with a few structural changes and a new paint job—with the Coast Guard insignia.



Cutter crew. Larry Bauer (R) points out a special feature of Flagstaff to some of its new crew members: (L to R) Chief Quartermaster Michael Frias, Boatswains Mate First Class Dave Lewis, and Sr. Chief Boatswains Mate Leslie Parritt. (Photo by Bob Settles)

Gets new post

Last week, Brian Masterson was appointed director of Public Affairs for Grumman Aerospace. In the newly established post, he will be responsible for employee communications, relations with the aerospace industry press, advertising, and promotion of aerospace products. He will report to Grumman Aerospace Chairman and President George Skurla and will coordinate his activities with Sandy Jones, Grumman Corporation Vice President-Public Affairs.

A 26-year Grumman veteran, Masterson has been involved in the communications field for over 20 years, and most recently was manager of Internal Communications for Grumman Corporation.

Home delivery

Starting this month, GRUMMAN OVERVIEW will be delivered to the home of each employee and shareholder of Grumman Corporation. The new magazine will be published six times a year and will contain the corporation's quarterly financial report, provide general information about Grumman Corporation and its subsidiaries, and a special review of the annual meeting.

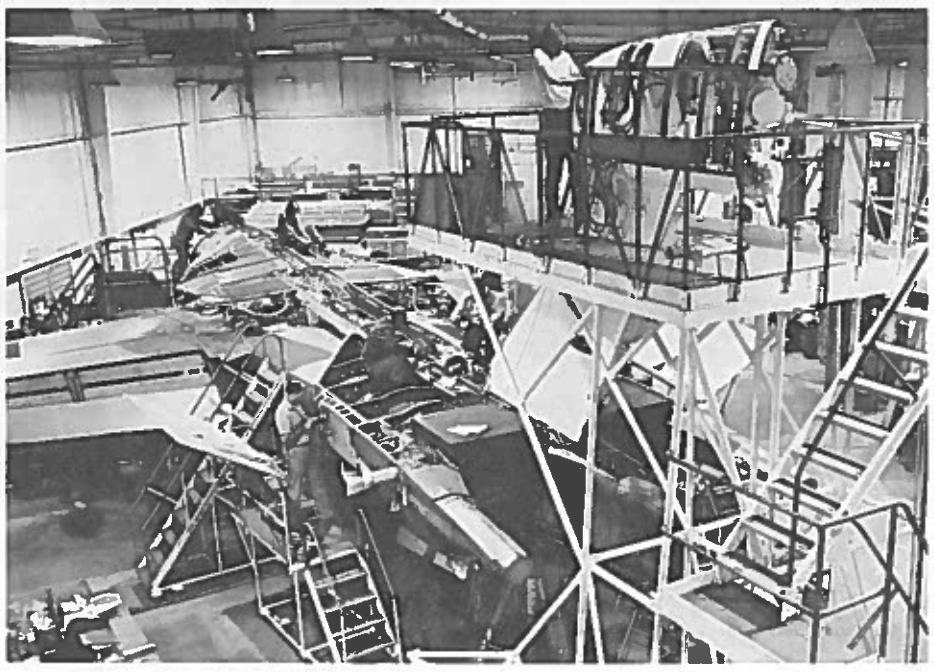
GRUMMAN OVERVIEW is published as a service of the Grumman Corporation Public Affairs Department, Vice President Sandy Jones, director, and John Lyons, editor.

EF-111 program shifts into high gear

In a hangar east of Plant 6, a community of industrious Grummanites has been working since July to convert two USAF F-111As into EF-111As, prototype tactical jamming system (TJS) aircraft. As the first-flight date nears, their pace is quickening.

Since the program began in January '75, the major challenge has been the integration of modern jamming equipment—most notably the AN/ALQ-99 (used in the EA-6B)—into the airframe to insure compatibility with the other F-111A systems.

Because success is heavily dependent on the performance of each member of the Calverton crew, the EF-111 manufacturing team is comprised of highly skilled people, says Manufacturing Manager Neil Watson. They specialize in such areas as electrical installation and testing, structural mechanics, environmental control, instrumentation, and hydraulics.

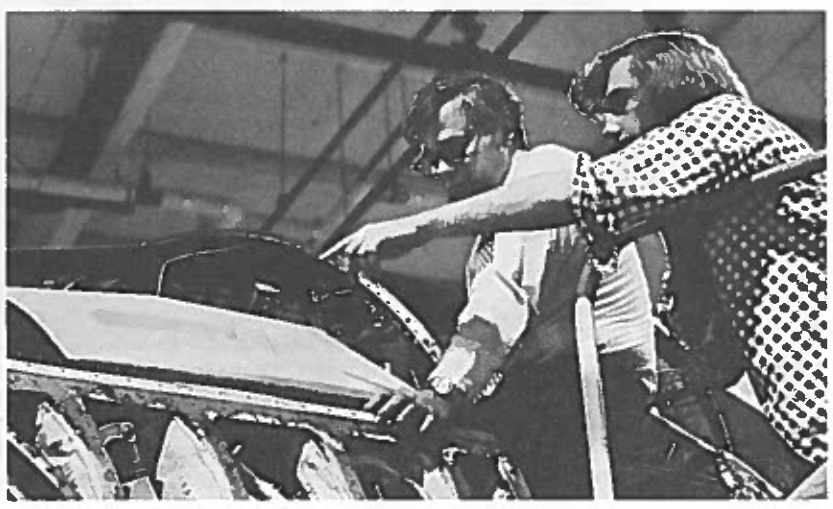


According to foreman Al Schrage, for example, over 16,000 terminations in the electrical system alone had to be checked out. Major structural changes were also required in the weapons bay, aft fuselage, and wheel-well areas to accommodate the new electronic counter-measure equipment.

Most of the required 5,600 separate pieces needed for structural changes were produced in-house, and both Watson and Schrage are quick to salute Grummanites in Plants 2, 3, and 27 for their contributions to the program. "In a prototype program the tooling budget is minimal," states Watson. "So, it takes people with top-notch skills to do the job right," reflects Watson. "Engineering changes are not uncommon to any aircraft development program. And, because only two aircraft are being 'produced', you don't have standard parts and sub-assemblies; everyone has to be flexible and innovative," he says. "That's been especially true here."

Photos by Gerry Costello

While the EF-111A manufacturing quarters might be physically isolated from the other Calverton action, it is not a lonely place. The production crew often hosts USAF personnel who have a keen interest in the development of this new generation of TJS aircraft. As the flight date approaches, more guests will be arriving at the hangar.



The maiden flight of EF-111A No. 1 marks the beginning of the last phase of the $100-million program. After the completion of the flight testing the two prototypes March '78, the USAF will decide whether to proceed with modification of additional F-111As to the EF-111A configuration. According to Tom Street, EF-111A program manager, should the USAF decide to modify additional planes (40 are planned) it could mean $300-$400-million in additional business for Grumman.

Paint stripper tip

Like to refinish items—furniture, autos, or any painted, or varnished items—using paint strippers or remover? Sure they work fine and save time, but do you heed the warning on the label? Or do you, like most people, go ahead and start your project some evening or rainy afternoon without sufficient preparation? Interior areas are generally not ventilated well enough for such work and exposure to the toxic fumes can be quite severe and prolonged.

But serious consequences can result if the paint remover contains methylene chloride. This compound is rapidly changed to carbon monoxide and the resulting low level of oxygen in the blood can push an individual with a heart problem over the edge, according to Dr. Richard D. Stewart and Carl L. Hake of the Medical College of Wisconsin. Back in 1971, the department of environmental medicine was testing staff members as part of an air pollution monitoring project and one person showed an elevated carbon monoxide level in the blood on a Wednesday morning after a weekend of paint stripping indoors. When the same results showed up the following Wednesday the investigators became suspicious.

Most paint and varnish removers, when used properly with the right equipment, won't create a particular hazard to your health. That generally means wearing rubber gloves and providing adequate ventilation to dissipate any toxic fumes.

In subsequent controlled studies with healthy volunteers they found that when paint remover, containing methylene chloride, is used indoors it can result in the absorption of a significant amount of the solvent. And using it for three hours can easily produce too much carbon monoxide in the blood. That can affect patients with heart disease. In an otherwise healthy person who smokes heavily, this added carbon monoxide can produce headache and nausea. Many paint removers contain methanol as well, which extends the half-life of blood carbon monoxide, and prolongs the period of heart stress.

What does this mean to you? Read the warning labels and take the necessary precautions of keeping this substance out of your eyes, off your skin, and out of your lungs. Do that and you can "strip away" without endangering your health.

Personal...

To all those who extended their good wishes and prayers during my recent illness, I am most grateful. Tracy Miller.

My family and I wish to express our gratitude to my supervisors and fellow workers for their kindness and generosity during my recent illness. Arnold Krause and family.

The Grumman F-14 Tomcat will be on display at WILLIAM TELL '76, an Air Force weapons meet scheduled for November 19-21 at Tyndall AFB. This will be the second visit for the Tomcat to the Florida Gold Coast and the weapons meet, having first appeared at Tyndall in 1974. This time, however, the swing-wing F-14 returns not only as the U.S. Navy's premier air-superiority fighter, it returns also as a leading candidate for the new interceptor to be selected for the Air Force's Aerospace Defense Command. The aircraft that goes on display at the meet will be provided by the Navy and will be flown to Tyndall from the naval air station at Oceana, Virginia, home base for fighter aircraft in the Atlantic Fleet. On exhibit with the Tomcat will be a variety of weapons employed by the aircraft, including the Phoenix, Sidewinder, and Sparrow missiles.

Blood bank depends on timely donations

It was a success—a huge success by previous standards—when Grumman initiated on October 15 the first Long Island-wide blood-donor program since World War II. During the day-long session at Plant 35, 272 men and women contributed to the Inter-County Blood Services drive, more people than ever before. Surprisingly, though, it could have been even more successful if a couple of hundred other expected donors had remembered they had a date with the blood bank.

There are many reasons, some very important, that prevent potential donors from appearing at scheduled times, says Pete Portanova, deputy director of Personnel for Grumman Corporation. And though donors should make every effort to keep their appointments, should a sudden demand require a change in schedule, he suggests that a person follow the suggested procedure for making such a change, which is contained on the donor's appointment card.

According to statistics supplied by the Inter-County Blood Services, a blood transfusion occurs every 17 seconds in the United States. Blood is needed for open-heart operations, mothers encountering difficult child births, hemophiliacs, and to prolong life for those who have leukemia. Of course, there are many, many other situations in which blood can prolong or save lives.

As major contributors to Long Island's blood-donor program, Grumman men and women have promised to donate approximately 400 pints of blood during each monthly session. And, during the corporate blood drive registration, over 5,000 pledged their support. That commitment, along with others in the Long Island area, determines the amount of help Inter-County Blood Services can forecast for the Island's 2½ million residents. Health officials also see Grumman's participation in the plan as the first step in a long-range effort to provide free blood for all people in the area.

There's another plus for Grummanites: When a person gives blood through the program he or she and all immediate family members are assured of a blood supply to meet any emergency that occurs anywhere in the United States for one year.

If you have signed up to be a donor, Portanova urges you to make every effort to keep your appointment. Also, if you haven't yet but want to join the blood-donor program, you can still do so by signing up at an Employee Services office. The next scheduled donor session will be held in Plant 35 on Monday, November 15.

You can be a lifesaver. Be a blood donor.

1,000 hours...and counting. It was a proud moment for Lt. Dan Palacheck (C) when he marked his 1,000th flight hour in the TC-4C. Helping him celebrate were Cdr. Bill Green, commanding officer of VA-42; and Grumman Field Service TC-4C logistics manager Charlie Bradford, who presented the naval aviator with a plaque commemorating the event.

Lasers now light the way to best tooling accuracy

The cost of manufacturing a product has become more expensive than ever before. Material, fuel, insurance, you name it, cost more this October than they did two years ago. This has brought with it an increased need for greater accuracy in machined parts and a high precision from the machine tools themselves.

The large number of identical machining operations required for mass production has led to increasing automation of machine tools, so the more accurate machine tools are, the better the quality of the finished product. Users of machine tools, then, must continuously study and improve the tools' operating characteristics to avoid the need for rework because of faulty tooling.

John Miller, group leader for the optical engineering metrology group of the Manufacturing Technology Department, explains that positioning accuracy and exact alignment of machine tools guarantees to a high degree the quality of machined parts.

At Grumman, Miller says, the accuracy of many machine tools is checked by optical laser alignment and measurement techniques. With the advent of the laser, checking the alignment of machine tools, aircraft assembly jigs, and especially the precise interfacing of sub-assemblies, has become faster and much more accurate. Laser tooling, for example, has permitted easier harmonizing of weapons systems and radar, navigational, and reconnaissance equipment on such craft as the A-6E/TRAM and F-14.

Many of the devices used in the optical laser system were developed by Grumman. Laser systems use an intense, uniform, non-divergent beam of light that is produced by helium-neon gas and controlled by optical lenses. The helium-neon laser was chosen because it operates well in shop conditions and requires only a few watts of power. Unlike high-powered lasers used for holemaking and welding operations, this system produces a low-power, continuous beam of red light.

Right on target

Laser beams travel in a very narrow beam over long distances with little dispersion. Its light goes in a direct, straight, unerring line to the target. Because of this characteristic, tunnels several miles long can be built with deviations of less than five-eighths of an inch at any point, and oil companies, when installing pipe lines, can make laser measurements of distances of over 10 miles within accuracies of one inch.

In years gone by this "straight" line was achieved by stringing a taut wire, says Miller, which was hard to handle and not provably accurate. More recently, imaginary straight lines were arrived at through alignment telescopes and other optical tooling devices. Optical tooling can be tricky and depends on the skill and judgment of the operator. Because the straight line is invisible, measurements were sometimes slow and tedious and usually took two persons to handle the chore.

The laser does the job quickly and more accurately by combining its beam with photoelectric detectors and electronic instrumentation. Although there is no dependence on the optical judgment of the operator, there is considerable skill involved in the process. Variables that can affect laser wave lengths—air temperature, barometric pressure, and humidity—are monitored electronically. Temperature and pressure sensors feed into the instrument's computer and humidity information is dialed into it manually so that it accounts for these conditions. Readings can be taken from the dial of a meter or from a digital display in a matter of minutes, whereas, before it could have taken several hours or even days to perform a similar task.

Laser tooling provides the fastest and most accurate method for testing the accuracy of machine tools, fixtures, and assemblies, says Miller, and is helping Grumman to deliver its products on schedule, and within budget.

1977 forecast

The Grumman Athletic Association reminds skiers and future Las Vegas vacationers to mark these dates down on your new 1977 calendar. On February 4-5-6 GAA is planning a weekend ski excursion to Lake Placid. Another ski-package tour will be offered the weekend of February 25-26-27 to Gore Mountain. The third annual GAA jaunt to Las Vegas, the "Entertainment Capital of the World" will take place May 13. More information will appear in a future issue of PLANE NEWS.

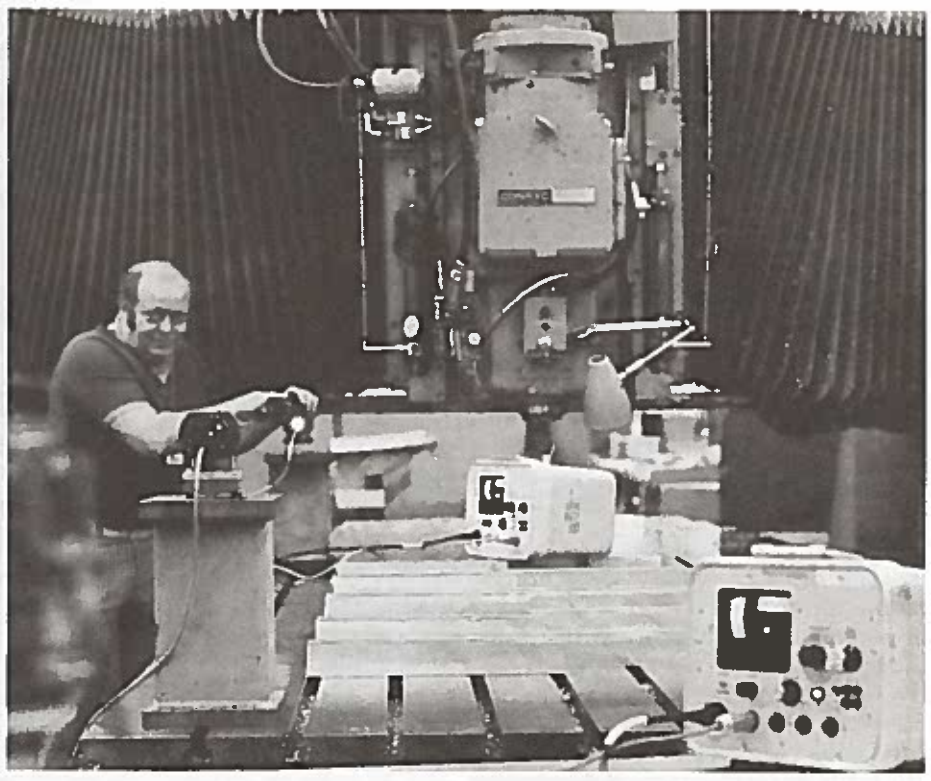
Keep in step

Whether you're in tune with disco dancing or not, the newly formed GAC Dance Club can help you keep in step with the latest dance crazes. Every Thursday evening from 5 to 7 in the Plant 28 auditorium, the club offers instruction in a variety of dances.

Here's how the fall session shapes up:

Dec. 2—Cha-cha; Dec. 9—Folk dance; Dec. 19—Folk dance party.

Friends and relatives are also invited. For additional information, contact Edith Murway, Ext. 3852, or Marvin Brown, Ext. 87307.



Line up. Oscar Schaefer, optical engineering and metrology, Plant 2, checks table alignment on milling machine using laser beam targets developed by Grumman. (Photo by Bob Settles)

Emergency technicians work helpful extra shift

Roy Jarret of Plant 2 saved a person's life two months ago, something he's done fairly often. As captain of the Centerport rescue squad and one of thousands of state-trained Emergency Medical Technicians, he was only doing his job. Well, his second job (he's a manager of manufacturing processes and training for Grumman).

On call

When Jarret and his crew answered the emergency call (made from a doctor's office) he discovered that the cardiac arrest victim was Dick Hane of the Bethpage Navy office. Jarret kept administering cardio-pulmonary resuscitation all the way to Huntington Hospital, straddling the patient on the litter, performing chest compressions until he was wheeled into the emergency room.

Roy is only one of many Grummanites who have second jobs as Emergency Medical Technicians (EMT's) or advanced EMT's, who voluntarily serve their communities. Besides a desire to serve, Ray Miller of the Plant 4 firehouse explains what it takes to be an EMT. "You need 91 hours of training, including at least 10 hours of service in real emergency situations, and standard first aid training. After that, you should be able to handle anything from a cut finger to delivering a baby."

What Ray didn't mention is the extra time it takes to be a life saver. As a member of the Nesconset Fire Department and ambulance crew, he spends about 12 hours in training and meetings a week, plus answering calls. That could be "up to 93 calls a month," says Ray, "but it averages out around 10 a week." Of course, like any other fireman or crew member, he's on-call 24 hours a day.

A couple of Plant 12 workers, Jimmy Diadato and Bob Zelenka, are EMT's too, but they serve a different community in a different manner. Both are members of the New York City Highway Patrol, a volunteer force of citizens who watch the city's main highways, assisting stranded motorists or providing aid at the scene of an accident. They took EMT training "because we wanted to be able to help people, not just report an accident," says Jim. They work two or more nights a week patrolling the highways of Queens in their own cars, which are loaded with road cones, first aid supplies, extrication equipment, and flares.

Rewarding payment

Why do so many full-time workers take on such demanding volunteer jobs? Roy Jarret, who also serves as a state EMT and Advanced EMT instructor trainer, as well as being a member of Huntington's disaster planning committee, says "It's simply rewarding. I've delivered a baby at 2:30 a.m. on a kitchen floor, and I think after 23 years of service I know everyone in my community almost by name. I've saved many lives, and get a sense of accomplishment. That's all the payment you could ever hope for."

Champions

1976 GAA Softball Leagues

PLANT 3—Chiefs: 1st row (L-R): Bob Dadario, Bob Lynch, Russ Pinkney, Tom Marion. 2nd row: Lynn Schorer, Domenick Verini, Tom Wagner, Vinny Perniciaro, Chris Hofman. Not pictured: Fred Ford, Carl Saulino, Jack Hooper, Don Cassese, Bob Perniciaro, Chris Hasenzahl, Nick Catania.

THURSDAY NITE—Egg Heads: 1st row (L-R): Joe Landfield, Pete Beana, Joe Genova, Joe DiBiasi, Jerry Varrichio, Frank Galgano. 2nd row: Ron Fais, Gary Watson, Bob Staudt, Charlie Hartigan, Al Rehwinkel, Ed Holland, Ed Brynda. Not pictured: Bob Nolan, Henry Pfister.

WEDNESDAY NITE—Jets: 1st row (L-R): Al Grillo, Dominick Pagnozzi, Cleveland Jones, Joe Vosefski, Joe Walsh, Bob Wissler. 2nd row: Pete Viteritti, Bill Diercks, Mickey Rowles, Marty Martinez, George Wright, Bob Metz, Tom Ramberg, Mike Gavigan, Walter Gleich, Paul Mendez. Not pictured: Bill Masone, Bob Perniciaro, Bob Kirby, Jerry Dimicelli.

PLANT 7—Production: 1st row (L-R): Ray Geminski, Bobby Taylor, Pete Dutton, Andy Bonavita, Mike Molinaro. 2nd row: Artie Aguiar, Pete Guido, John Bergmann, Roger Herow, Tommy Block, Artie Donato, Charlie Cava, Greg Weis. Not pictured: Bill Flatley, Pete Tummillo, Al Russo, Larry Williams.

GREAT RIVER—Duds: 1st row (L-R): Eloise Neville, Izzy Fried, Richie Faby, Bruce Honahar, Ray Tiedeman. 2nd row: Bob Albert, John Neville, Tony Scionti, Bill Masone, Ken Reifschneider, Chuck Hess, Bob Klewicki, Chet Senig, Morris Benny, Don Bolum. Not pictured: Bob Kirby, Bob Malfa.

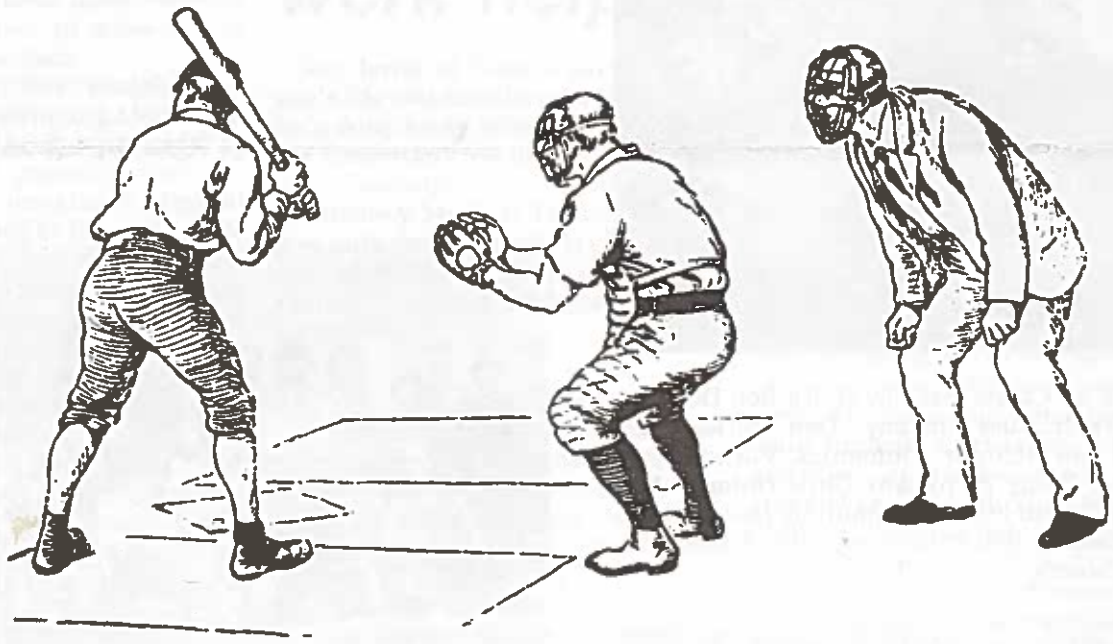
Champions

MONDAY NITE—Monopoles: 1st row (L-R): Marty Martinez, Mickey Rowles, Joe Vosefski, Bob Savasta, Bob Jones. 2nd row: Bill Diercks, Ed Gabriel, Paul Bavitz, Pat Sanatar, Don Nicosia. 3rd row: Pete Viteritti, Charlie Bosch, Chris Hofman, Mike Gabriel, Willy O'Connell. Not pictured: Charlie Dietz, Al Wallace, Lee Gendron, Gene Lowie, Jim Casey.

PLANT 1—Misfits: 1st row (L-R): Paul Regensburg, Phil Benardello, Jim Minsky, Bob Pirog, Dennis McKeefery. 2nd row: Ray Piaseczny, Wes Douglas, Bill Fallar, Steve Kish, Gene Ricca, Rich Lopez. 3rd row: Lenny Luke, Mike Gallo, Bob Kalback, Henry Buchanan, Henry Szubzda. Not pictured: Jack Ford, Danny Pierce.

TUESDAY NITE—Woodpeckers: 1st row (L-R): Fred Becker, Joe Vosefski, Pete Viteritti, Bill Diercks, Jeff Hansen. 2nd row: Bruce Armour, Wayne Woodhams, George Cumberland, Gordon Bell. 3rd row: Sal Barcia, Joe Avanzato, Stu Kornreich, Bob Ogilvie, Bob Zimbardi. Not pictured: Frank Quarto, Tony D'Ambrosio, Sal Iaccarino, Charlie Esposito, Bob Schmidt.

PLANT 6—New Breeds: 1st row (L-R): Vic Rutkowski, Art Bolomey, Carl Thilburg. 2nd row: Ted Jasinski, Butch Buffa, Charles Tyler, Chick Robb, Frank Posillico, Allan McCaffery.



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GRUMMAN plane news

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